Use of Monroe Hemi-Sync® Relaxation Tapes to Decelerate Maladaptive Behavior

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Self-injurious behavior historically has presented one of the most difficult problems in the field of developmental disabilities. It can result in severe injury to the individual, such as repeated scarring of the skin, loss of vision, loss of body parts, etc. It also causes individuals frequently to be institutionalized and, in some cases, restrained throughout the day.

A variety of treatments have been employed to decelerate self-injurious behavior. A comprehensive review of these is provided by Fulcher (1984). This review reports successful interventions in the literature using extinction, timeout, differential reinforcement of other behavior, overcorrection, aversives, and combined procedures. Also reported is at least one successful use of relaxation procedures by Steen and Zuriff (1977).

Virtually all treatments used to decelerate self-injurious behavior have involved modification of the environment's response to the individual's self-injurious behavior. Reinforcement procedures provide rewards for the non-occurrence of the behavior. Response-contingent procedures, such as timeout, overcorrection, or aversives, attempt to provide punishing conditions after an occurrence of self-injurious behavior.

The principal difficulty presented by procedures of this type is that the environmental conditions which decelerate self-injurious behavior must be maintained on a long-term basis, even when frequencies are decreased to a very low level. Any "letting up" in the program typically results in a recurrence of the behavior. Unfortunately, most research reports do not indicate whether initial success was maintained on a long-term basis. Fulcher (1984) notes the "gross lack of adequate follow-up data and the dearth of information on generalization effects (p. 61)." One study which did report long-term follow-up and generalization (Murphey, Ruprecht, Baggio, and Nunes, 1979) showed a failure to maintain success of a mild aversive procedure in a new setting after twenty months.

An alternative approach to the treatment of maladaptive behavior is to attempt to modify the individual as well as his or her environment. Use of psychotropic medications represents one attempt to do this, although the success rate is limited. Teaching skills for coping with environmental stress represents another such approach. The following case report describes one application of a program involving relaxation therapy and individual counseling to decelerate self-injurious behavior.

Case Report

Subject

The subject was a 35-year-old female. Initial impression of the client revealed a female adult who was markedly underweight (5 feet 1 inch tall; weight 70 lbs.). Her low weight was believed to be the result of hypoglycemia. She was mildly retarded with a full scale WAIS IQ of 57. She was also edentulous, but wore false teeth most of the time. As a result of being edentulous, her speech was very difficult to understand. She showed no other physical impairment.

Presenting Problem

The client was referred for treatment of self-injurious behavior. From time to time she would become very agitated and would begin screaming, throwing herself onto the floor, and scratching her face and arms. Records indicated that the problem had been occurring for at least fifteen years (probably longer) in both institutional settings and community settings. At the time of admission she was living with her family.

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Treatment Setting
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behavioral treatment. The unit admits persons from community settings who are mentally retarded o
and who display severe maladaptive behavior. Clients are admitted for prearranged treatment p
periods (usually 90 days) after which they return to community living arrangements. Extensions of s
residence beyond 90 days are permitted when additional treatment is indicated.

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Initial Treatment Attempt and Results
a
t Because of the client's extreme potential for injury, collection of no-treatment baseline data w
was deemed inappropriate. Implementation of treatment procedures began immediately upon a
admission to the unit.
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t The initial treatment was limited to "conventional" behavior modification procedures. The s
client was reinforced for appropriate behavior by means of a token economy system (Ayllon and
Azrin, 1968). The client received tokens for participation in adaptive programs (education, r
recreation, leisure training, etc.) throughout the day. Tokens could be exchanged for edible treats at t
the token store. The token store was available at 7:00 AM, 10:00 AM, 2:00 PM, 4:00 PM, 7:00 PM,
and 10:00 PM.
t
h When the client became agitated and began to display self-injurious behavior, staff initially i
intervened using manual restraint procedures. She was held motionless face down on the floor by at
least three staff members. As soon as was feasible she was placed in mechanical restraint. The m
mechanical restraint consisted of tying each of her four extremities to each of the four corners of
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her bed using strips of terrycloth. This type of restraint was deemed appropriate because the client would sustain bruises during extended periods of manual restraint. The client was released from mechanical restraint after she remained calm (i.e. not struggling or shouting) for a period of thirty consecutive minutes.

Data were recorded by direct care staff on data sheets and in daily progress notes. Data collection represented a. particular problem, since use of mechanical restraint artificially suppressed the rate of behavior. Moreover, the client appeared to have episodes of self-injurious behavior in "clusters," so that the occurrence of an episode during a day was associated with an increased probability of more episodes during that day (i.e. she had good days and bad days). Staff often found it difficult to determine where one episode ended and other began.

Because of these problems, data are recorded in terms of the number of days during which there was at least one episode of self-injurious behavior. Data depicted in the Figure are recorded in this fashion. Points on the graph represent the number of days in each week during which there was at least one episode of self-injurious behavior.

Referring to the Figure, it can be seen that the program involving token economy and mechanical restraint was largely ineffective. Behavioral frequencies were erratic from week to week, but the general trend was toward an overall increase in the frequency of self-injurious behavior. After eighteen weeks, no significant progress had been shown in treating this behavior.

Hemi-Sync Treatment and Results

After failure of the initial program attempt, the treatment team decided to attempt a new approach with this client. It was reasoned that she might be chronically "stress-intolerant," since relatively mild stressors in the environment appeared to precipitate behavioral episodes. Therefore, a treatment program which would attempt to improve stress tolerance by means of relaxation exercises and individual counseling.

The relaxation component selected was the Hemi-Sync programmed relaxation tape. Hemi-Sync or hemispheric synchronization, is a technique developed by The Monroe Institute of Faber, Virginia. The process involves the playing of tones to each ear which are slightly out of phase with one another. The slight discrepancy between the tones affects brain activity when the listener hears them via stereophonic reproduction. Specifically, the effect of the tones is to bring the activity of the two brain hemispheres (as recorded on an EEG) into synchrony (hence, hemispheric synchronization). This synchronization of the hemispheres can induce a state of deep relaxation.

The Hemi-Sync tape used was called Focus 10. The tape consists of three components. First, the Hemi-Sync tones were played on the tape. Second, a form of white noise, modified to sound like an ocean surf, was played in order to mask the tones. Finally, a guided relaxation exercise was spoken on the tape. The length of Focus 10 is approximately forty-five minutes.

The client listened to the Focus 10 tape three times each week. In addition, she took part in individual counseling (conducted by the authors) twice weekly. Where possible, the counseling sessions were scheduled to take place shortly after the client listened to Focus 10. Issues addressed in counseling included how to respond to being "picked on," plans following discharge, and the possibility of life after death. The latter issue was brought up by the client when her father died during her period of residence at SBU.

Results of the addition of the Hemi-Sync relaxation tapes and counseling to the ongoing token economy and physical restraint procedures are also depicted in the Figure. In the Figure it can be seen that these procedures resulted in a substantial decrease in the frequency of self-injurious behavior. After three weeks, the behavior had been reduced to zero frequency and it did not recur until the twenty-eighth week of residence at SBU. This last episode was apparently the result of the fact that the client had been repeatedly promised her discharge, only to have the discharge delayed due to lack of a community program placement. After the third such disappointment within a month, she became self-injurious.

After twenty-nine weeks in residence at SBU the client was discharged to a foster home. She did not particularly like this arrangement, and on her tenth week after discharge she was transferred to a transitional group home, where she remained for the rest of that year.

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Discussion
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use of Hemi-Sync tapes in conjunction with counseling brought about an immediate and long term
amelioration of self-injurious behavior. Even more important is the fact that the Hemi-Sync and
counseling procedures were easily transferred from an institutional setting to a community setting.
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Two points are worthy of mention. First, we note that those who worked with this client (ourselves included) frequently attempted to attribute her behavior disorder to a medical condition. Here history was replete with reports of persons from all disciplines who attributed her behavior problem to hypoglycemia, pre-menstrual syndrome, or other medical disorders. None of these diagnoses resulted in any effective treatment. It is interesting to speculate regarding the reluctance of professionals to consider her disorder to be psychogenic. Perhaps this is due to the fact that medical conditions are better understood than are the behavior problems of mild and moderately retarded adults.

Emotional and behavioral disorders of mildly and moderately retarded persons are our second point. Clearly, our understanding of these individuals is limited at best. Treatment procedures historically have involved response-contingent interventions similar or identical to those used with severely retarded persons. In addition, many professionals continue to adhere to the belief that psychotherapeutic procedures cannot work with mentally retarded persons. The case presented herein represents one demonstration that psychotherapeutic procedures can be used with

retarded persons. Future research and treatment of these individuals may produce other workable interventions.

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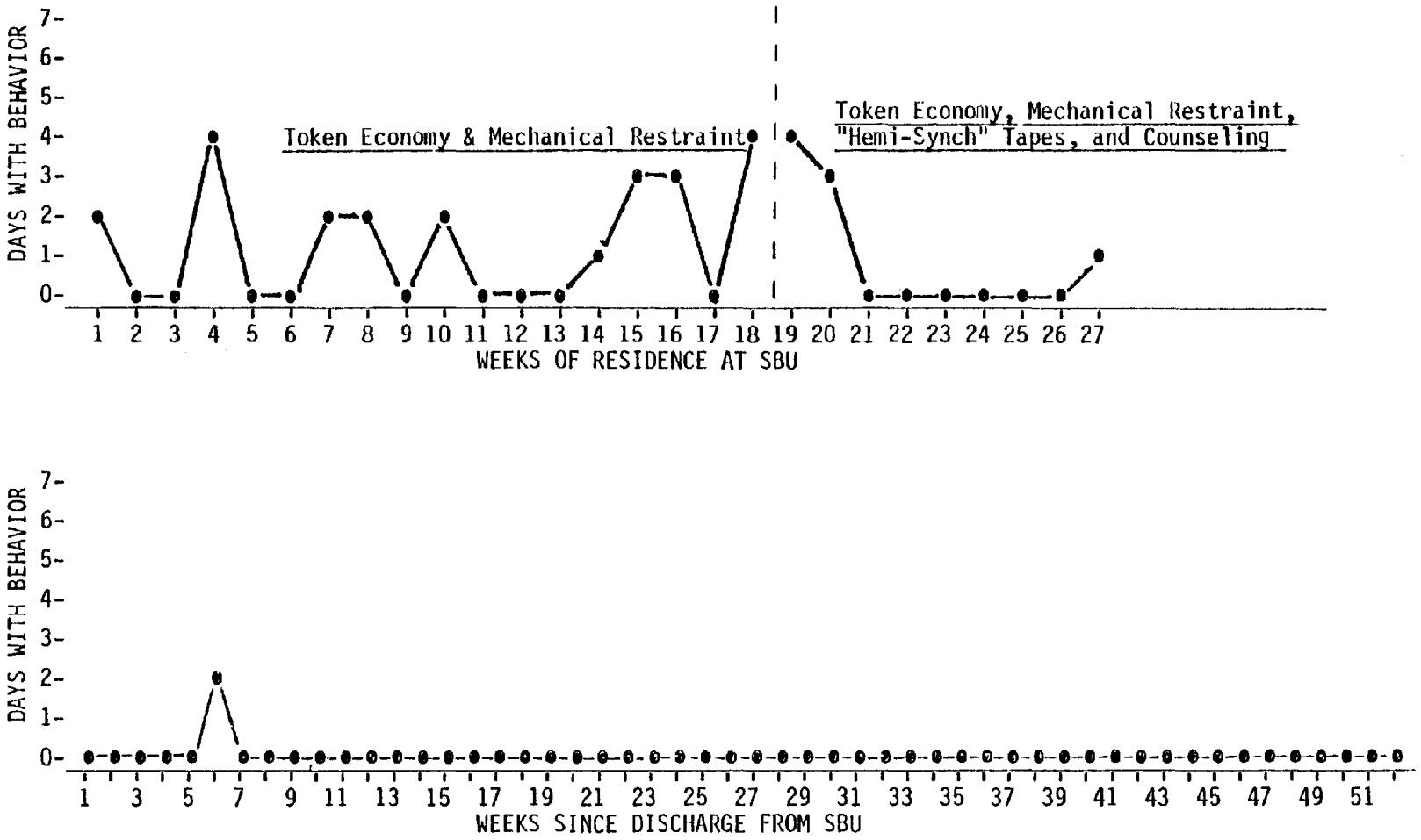

FIGURE. Number of days during each week containing at least one episode of self-injurious behavior. The upper graph depicts the two program attempts while the client was in residence at SBU. The lower graph reflects frequencies during the year after discharge.